

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO COMMERCIAL

Report Number: P837682

Luminaire Tested: HCSQ460D010-HM44560830-41SQMW

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837682  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ460D010-HM44560830-41SQMW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: -

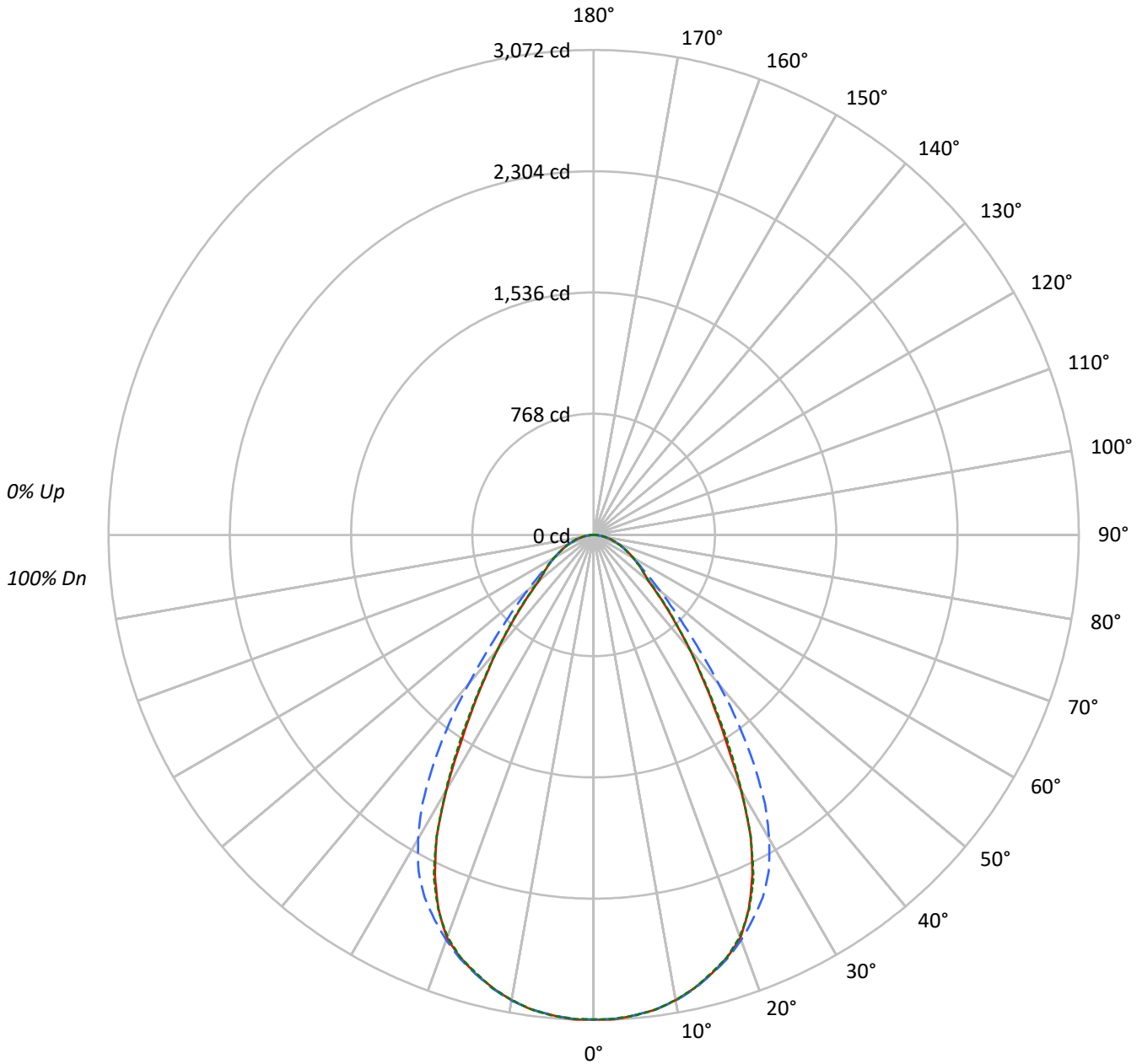
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4454.7 lumens  
Efficiency: N/A  
Efficacy: 79.5 lumens/watt  
Spacing Criteria (0/90/45): 1.03 / 1.03 / 1.07  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 56  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P837682  
CATALOG NUMBER: HCSQ460D010-HM44560830-41SQMW

### Luminous Intensity Polar Plot





TEST NUMBER: P837682

CATALOG NUMBER: HCSQ460D010-HM44560830-41SQMW

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	111	108	105	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89								
2	104	98	92	88	102	96	91	87	92	88	85	89	86	83	86	84	81	79								
3	97	89	82	77	95	87	81	76	84	79	75	82	78	74	79	76	73	71								
4	91	81	74	69	89	80	73	68	77	72	67	75	70	66	73	69	66	64								
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58								
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53								
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48								
8	70	59	52	47	69	58	51	47	57	51	46	56	50	46	55	50	46	44								
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	41								
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38								

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	297369	297369	297369
5°	296881	296881	297114
10°	294451	294677	294215
15°	288723	288964	288242
20°	280062	281536	279082
25°	254174	270742	255959
30°	208634	248658	209439
35°	156829	208734	159087
40°	119443	155637	119140
45°	89202	110451	90833
50°	67941	82319	69372
55°	61225	64451	61225
60°	55916	55451	55451
65°	50843	50843	50843
70°	47302	46622	46622
75°	43755	42857	43755
80°	39944	38606	39944
85°	34457	34457	34457

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 110451 cd/sqm



TEST NUMBER: P837682

CATALOG NUMBER: HCSQ460D010-HM44560830-41SQMW

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	289.5	6.5
10°-20°	810.4	18.2
20°-30°	1114.6	25.0
30°-40°	948.9	21.3
40°-50°	573.1	12.9
50°-60°	337.8	7.6
60°-70°	221.5	5.0
70°-80°	122.8	2.8
80°-90°	35.9	0.8
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	2214.6	49.7
0°-40°	3163.4	71.0
0°-60°	4074.3	91.5
0°-90°	4454.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4454.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3070	3070	3070	3070	3070	
5°	3053	3055	3053	3050	3055	290
15°	2879	2886	2881	2879	2874	810
25°	2378	2452	2533	2457	2395	1075
35°	1326	1460	1765	1500	1345	839
45°	651	720	806	727	663	512
55°	362	370	382	370	362	326
65°	222	224	222	222	222	222
75°	117	117	114	114	117	124
85°	31	31	31	31	31	36
90°	0	0	0	0	0	



TEST NUMBER: P837682

CATALOG NUMBER: HCSQ460D010-HM44560830-41SQMW

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3069.6	3069.6	3069.6	3069.6	3069.6
2.5°	3072.0	3064.8	3067.2	3064.8	3067.2
5°	3052.9	3055.3	3052.9	3050.5	3055.3
7.5°	3031.4	3029.0	3029.0	3026.7	3031.4
10°	2993.3	2988.5	2995.6	2990.9	2990.9
12.5°	2940.8	2947.9	2945.6	2945.6	2940.8
15°	2878.8	2885.9	2881.2	2878.8	2874.0
17.5°	2807.2	2812.0	2814.4	2804.8	2804.8
20°	2716.6	2726.1	2730.9	2714.2	2707.1
22.5°	2566.3	2609.3	2635.5	2606.9	2571.1
25°	2377.9	2451.9	2532.9	2456.6	2394.6
27.5°	2151.3	2256.3	2401.8	2273.0	2151.3
30°	1865.1	2020.2	2222.9	2036.8	1872.3
32.5°	1569.4	1733.9	2017.8	1762.6	1602.8
35°	1326.1	1459.7	1765.0	1500.2	1345.2
37.5°	1116.2	1230.7	1500.2	1256.9	1128.1
40°	944.5	1035.1	1230.7	1047.0	942.1
42.5°	779.9	865.8	997.0	877.7	789.5
45°	651.1	720.3	806.2	727.4	663.0
47.5°	541.4	598.7	660.7	598.7	548.6
50°	450.8	496.1	546.2	496.1	460.3
52.5°	403.1	417.4	450.8	419.8	403.1
55°	362.5	369.7	381.6	369.7	362.5
57.5°	324.4	329.1	326.8	326.8	324.4
60°	288.6	291.0	286.2	288.6	286.2
62.5°	255.2	255.2	250.4	255.2	252.8
65°	221.8	224.2	221.8	221.8	221.8
67.5°	193.2	193.2	190.8	193.2	193.2
70°	167.0	167.0	164.6	167.0	164.6
72.5°	140.7	140.7	138.3	138.3	138.3
75°	116.9	116.9	114.5	114.5	116.9
77.5°	93.0	93.0	90.6	93.0	93.0
80°	71.6	71.6	69.2	71.6	71.6
82.5°	50.1	50.1	50.1	52.5	52.5
85°	31.0	31.0	31.0	31.0	31.0
87.5°	14.3	14.3	14.3	14.3	16.7
90°	0.0	0.0	0.0	0.0	0.0

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Report Generated By 670245859 / DESKTOP-T8S5UU9

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report







— 0°-180°    - - 45°-225°    - - - - 90°-270°

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)